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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

November 10, 1992

Mr. Eric Goller
U.S. Department of Energy
P.O. Box 550, MS: A6-95
Richland, WA 99352-0550

Dear Mr. Goller:

Re: Review of the 100 Area Feasibility Study Phases 1 and 2 (DOE/RL-92-11)

Enclosed are Ecology comments on the 100 Area Feasibility Study Phases 1 and 2. It is my understanding that there is no lead regulatory agency for this report, therefore, comments from the Environmental Protection Agency will be submitted separately.

This report was intended to develop a range of technologies such that the operable unit specific focused feasibility studies can draw from a reduced list of appropriate technologies. This report does not satisfy this goal. It also appears that the technologies identified were selected on a "best professional judgement" basis, and not based on the contamination present in the environment. The report does, however, do a good job of identifying the available technologies.

Please call me at (206) 493-9367 with any questions, or to schedule a date to disposition these comments.

Sincerely,

Richard B. Hibbard, P.E.
Nuclear and Mixed Waste Management

RBH:jw
Enclosure

cc: Dennis Faulk, EPA
Becky Austin, WHC
Larry Goldstein, Ecology
Darci Teel, Ecology
Administrative Record (All 100 Areas), (EDMC H4-22)



COMMENTS ON THE 100 AREA FEASIBILITY

STUDY PHASES 1 AND 2, DOE/RL-92-11

DRAFT A, JULY 1992

1. Executive Summary, Page xiii, sixth paragraph:

Deficiency: The concept of benefit to cost ratio is unacceptable and should not be used. Cost is only addressed as a balancing criteria that should be applied after a group of alternatives meeting the same general requirements has been identified.

Recommendation: Remove reference to benefit to cost analysis.

2. Section 1.0, Page 1-1, second paragraph:

Comment: The TPA does not require that RCRA and CERCLA integrate. It does recommend that where ever possible the program integrate.

3. Section 1.1, Page 1-4, number 2:

Comment: This Feasibility should not be concerned with nor should it address ARARs that pertain to waste disposal.

4. Section 1.1, Page 1-4, last paragraph:

Deficiency: One goal of this report is to select a range of remediation technologies based on contaminants of concern. It is impossible to select the contaminants of concern with out including the LFI sample results. The information would have been available if the laboratory turn around times had followed the TPA time frames.

Recommendation: Due to the lack of hazardous and radioactive validated data, this report either identifies technologies based upon best professional judgement or old un validated data. Revise the executive summary to state the uncertainties associated with the conclusions presented in this report.

5. Section 1.3.1.2.1, Page 1-9, last paragraph:

Comment: The chemicals identified as naturally present in the river water were all added as part of the pretreatment process. What purpose does it serve to call the added chemicals "naturally present"? The footnote should be deleted.

6. Section 1.3.1.3.2, Page 1-18, forth paragraph:

Comment: The process to decay radionuclides from 1978 to present is relatively simple. Presenting data that is over 14 years is of little use.

7. Section 1.3.1.3.3. Page 1-31. first paragraph:

Comment: The EP TOX Test is no longer used to designate dangerous waste within the state of Washington. It was replaced by the TCLP method. This waste is therefore, currently undesignated. All reference to designation should be reworded or deleted. Also, I assume the text should have read "... no hazardous ...".

8. Section 1.3.1.7.3. Page 1-52 to 57:

Comment: This section should include a comparison between the 1988 and 1977 data. The purpose of which to identify trends changes over the 11 year period.

9. Section 3.0. Page 3-2. first bullet:

Deficiency: The term "equitably" has a different meaning from the word "inconsistent".

Recommendation: Revise the language for the six wavers to be consistent with CERCLA.

10. Section 4.2. Page 4-2 to 4-8:

Deficiency: This section has no purpose in the context of selecting appropriate technologies for implementation in the 100 Areas. The affected media and the contaminants of concern are exceptions to this statement. Specific examples of sections that do not belong are:

- Point of compliance (not consistent with MTCA)
- Exposure pathways and receptors (not consistent with HBRAM)
- Remedial action goals (not selected until the ROD)

Recommendation: Delete this section and defer this argument until the operable unit specific ROD's. Only the effected media and contaminants of concern should remain.

11. Section 4.5.2.1. Page 4-19. fourth and sixth paragraphs:

Comment: The argument for containment has some flaws. First off, the Hanford barrier is no longer designed for 10,000 years. In fact it is not even proved to be equivalent to a 30 year RCRA cap. Any cap that is expected to last longer than 10 years will require long term maintenance.

12. Section 4.5.2.2, Page 4-24, last paragraph:

Deficiency: The technologies identified in the in-situ category are actually ex-situ technologies.

Recommendation: Move the discussion to a more appropriate location.

13. Table 4-1, Page 4-31:

Deficiency: Each of these categories should include exposure to ingestion, consumption of plants, water and wind erosion, and bioaccumulation.

Recommendation: Include the above categories for all categories.

14. Section 5.2, Page 5-2, fourth paragraph:

Deficiency: Ecology disagrees that soil and riverbank sediments are similar. For example, later in this report the alternatives include institutional controls, capping, vitrification, etc. With respect to institutional controls, it will be impossible to fence the riverbank sediments unless the fence is in the water.

It would be impossible to place a RCRA multimedia Cap or a hanford barrier over riverbank sediments due to erosional problems.

Riverbank sediments are not appropriate for vitrification due to the high moisture content.

Recommendation: Create a separate category that addresses the options available for riverbank sediments.

15. Section 5.3, Page 5-2 to 5-4:

Deficiency: The referenced report (EPA 1988a), addresses the CERCLA 9 criteria. Ecology objects to the concept of creating the categories listed in this section.

Recommendation: Delete this entire section and comply with the requirement in CERCLA to compare with the 9 criteria.

16. Section 5.3.4.4.1, Page 5-34 to 5-37:

Comment: The disposal options listed are inconsistent with the plans to build a CERCLA past practice waste disposal facility. Within different program of USDOE it is important to only recommend alternatives that are consistent with other plans. Revise the disposal alternatives to be consistent with Mr. J. Goodenough's soil disposal facility.

17. Section 5.3.4.6.1, Page 5-42, second bullet:

Comment: Stabilization/Solidification alternatives should also include non soil washed remediation.

18. Section 5.2.4.6.1, Page 5-43, last bullet:

Comment: The Hanford Barrier has not been proven to be equivalent to a RCRA cap. Therefore all references to the Hanford barrier should address it as being proposed.

19. Table 5-8, Page 5-50:

Deficiency: The same comments as above apply to this table because soils and riverbank sediments are not similar.

20. Figure 5-1, Page 5-53:

Deficiency: Any institutional action should include monitoring. It is not clear why this was removed from further consideration. Ecology also, objects to the removal of synenthetic and soil/clay liners.

21. Figure 5-2, Page 5-59:

Deficiency: Surface disposal of treated waste water should not be removed from further consideration. It is possible that a surface discharge is exactly what we want to do. For example, the surface discharge would gain another level of treatment by utilizing the surfical soils as a filter. I recommend you contact Mr. D. Sherwood (EPA) to discuss this further.

Ecology objects to deep well injection and reinjection to the aquifer.

22. Section 6.1, Page 6-7, step 3:

Comment: This step should summarize and build upon the data generated as a result of steps 1 and 2.

23. Section 1.0, Page A-1:

Comment: This report should evaluate existing conditions before it attempts to select contaminants of concern. If it does not evaluate existing conditions a conservative approach must be used to consider all potential contaminants as contaminants of concern.

24. Section 2.0. Page A-1:

Comment: The concept of a qualitative toxicity assessment is new. It is not clear what the objectives of developing a new concept is. Ecology recommends we stick to the existing procedures for risk assessment evaluation.

25. Appendix B. ARARs:

Deficiency: The ARARs list is not complete. Amend the list to include the following:

STATE ARAR's

1. CHEMICAL SPECIFIC

WAC 173-303 Dangerous Waste Regulations APPLICABLE

Chapter 173-303 WAC establishes procedures for characterizing hazardous waste as Dangerous Waste (DW) or Extremely Hazardous Waste (EHW). Additional distinction is based on Persistence, carcinogenicity, mutagenicity, tetraoxygenicity, concentration of certain compounds, and toxicity as defined by WAC 173-303-070 to 110. Wastes excavated on sites which upon testing designates as DW or EHW must be handled under this regulation. Other sections not identified here should be considered relevant and appropriate.

WAC 173-340 MTCA Cleanup Regulations APPLICABLE

Chapter 173-340 WAC defines specific cleanup levels for numerous contaminants and point of compliance.

WAC 173-400 General Regulations for Air Pollution Sources APPLICABLE

Chapter 173-400 WAC establishes standards that are technically feasible and reasonably attainable for air pollution sources.

WAC 173-460 Controls for New Sources of Toxic Air Pollutants
RELEVANT AND APPROPRIATE

Chapter 173-460 WAC establishes the systematic control of new sources emitting toxic air pollutants.

WAC 173-475 Ambient Air Quality Standards for Carbon Monoxide, Ozone, and Nitrogen Dioxide APPLICABLE

Chapter 173-475 WAC defines state wide air quality standards for carbon monoxide, ozone, and nitrogen dioxide.

WAC 173-480 Ambient Air Quality Standards and Emission Limits for Radionuclides APPLICABLE

Chapter 173-480 WAC defines maximum allowable levels for radionuclides in the ambient air.

WAC 173-490 Emission Standards and Controls for Sources Emitting Volatile Organic Compounds (VOC) APPLICABLE

Chapter 173-490 WAC establishes technically feasible and reasonable attainable standards for sources emitting VOC's.

Soil Cleanup/Remediation at Hanford February 1992 To Be Considered

The Department of Ecology Nuclear and Mixed Waste Management Program Soil Cleanup Policy became effective February 5, 1992. The purpose of this policy is to provide a basis for consistent cleanups, remediations, and closures at the Hanford Site.

2. ACTION SPECIFIC

RCW 18.104 Water Well Construction RELEVANT AND APPROPRIATE

This regulation establishes authority for Ecology to require the licensing of water well contractors and operators and for the regulation of water well construction.

RCW 70.94 Washington Clean Air Act APPLICABLE

Chapter 70.94 RCW directs the state to secure and maintain levels of air quality that will protect human health and prevent injury to plant and animal life.

RCW 70.95 Solid Waste Management RELEVANT AND APPROPRIATE

Chapter 70.95 RCW establishes a state wide program for solid waste handling, and solid waste recovery and/or recycling which will prevent land, air, and water pollution and conserve the natural, economic and energy resource of this state.

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RCW 70.98 Nuclear Energy and Radiation RELEVANT AND APPROPRIATE

Chapter 70.98 RCW establishes a program to establish procedures for assumption and performance of certain regulatory responsibilities with respect to byproduct, source, and special nuclear materials.

RCW 70.105 Hazardous Waste Management APPLICABLE

The purpose of Chapter 70.105 RCW is to establish a comprehensive state-wide framework for planning, regulation, control, and management of hazardous waste which will prevent land, air, and water pollution and conserve the natural, economic, and energy resources of the state.

RCW 70.105D Hazardous Waste Cleanup, Model Toxics Control Act (MTCA)
APPLICABLE

Chapter 70.105D RCW provides Ecology with the authority to investigate and conduct remedial actions upon releases of hazardous substances.

RCW 90.44 Regulation of Public Ground Water RELEVANT AND APPROPRIATE

This chapter gives Ecology the authority to regulate and control ground water of the state.

RCW 90.48 Water pollution Control APPLICABLE

Chapter 90.48 RCW provides authority to regulate discharges of any pollutant to waters of the state (including surface and ground water, direct and indirect discharges).

RCW 90.52 Pollution Disclosure Act RELEVANT AND APPROPRIATE

Chapter 90.52 RCW describes the authority of the state to regulate reports for any commercial or industrial discharge, other than sanitary sewage, into waters of the state.

RCW 90.54 Water Resources Act RELEVANT AND APPROPRIATE

Chapter 90.54 RCW gives the state authority to implement water related resources programs.

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WAC 173-160 Minimum Standards for Construction and Maintenance of Wells RELEVANT AND APPROPRIATE

Well construction regulations establish minimum standards for water well construction and require the preparation of construction reports.

WAC 173-162 Rules and Regulations Governing the Licensing of Well Contractors and Operators RELEVANT AND APPROPRIATE

Chapter 173-162 WAC establishes requirements for licensing of well drillers.

WAC 173-216 State Waste Discharge Permit Program APPLICABLE

Chapter 173-216 WAC establishes a permit system for discharges of waste water to groundwater and surface water via municipal sewage systems.

WAC 173-218 Underground Injection Control Program APPLICABLE

Chapter 173-218 WAC pertains to the injection of wastes into aquifers that are used for drinking water.

WAC 173-303-670 Incinerators RELEVANT AND APPROPRIATE

If incinerators are used as a remedial technology this regulation would be applicable.

WAC 173-304 Minimum Functional Standards for Solid Waste Handling RELEVANT AND APPROPRIATE

Chapter 173-304 WAC establishes minimum functional performance standards for the proper handling of all solid waste materials.

WAC 173-403 Implementation of Regulations for Air Contaminant Sources RELEVANT AND APPROPRIATE

Chapter 173-403 WAC establishes procedures for the implementation of regulations and rules generally applicable to control and/or prevention of the emission of air contaminants.

WAC 173-470 Ambient Air Quality Standards for Particulate Matter RELEVANT AND APPROPRIATE

Chapter 173-470 WAC establishes concentrations for particle fallout standards for all areas within the State of Washington.

WAC 173-480 Ambient Air Quality Standards and Emission Limits for Radionuclides APPLICABLE

Chapter 173-480 WAC establishes a 25 mrem/y whole body or 75 mrem/y critical organ dose to any member of the public. The point of compliance is all portions of the site.

WAC 246-221 Radiation Protection Standards APPLICABLE

Chapter 246-221 WAC establishes standards for protection against radiation hazards.

WAC 246-247 Radiation Protection -- Air Emissions APPLICABLE

Chapter 246-247 WAC establishes a 25 mrem/y whole body or 75 mrem/y critical organ dose to any member of the public. It also, requires registration of the source with Ecology.

3. LOCATION SPECIFIC

RCW 90.03 & RCW 90.14 State Water Code and Water Rights RELEVANT AND APPROPRIATE

Water code and water rights laws specify conditions for extracting surface water or ground water for non-domestic uses. In essence, the laws provide that water extraction must be consistent with beneficial uses of the resource and must not be wasteful.

WAC 296-62 Washington Industrial Safety and Health Act Occupational Health Standards--Safety Standards for Carcinogens RELEVANT AND APPROPRIATE

State health and safety regulations are generally similar to those espoused by the federal regulations (i.e., OSHA), and are applicable to all remedial actions involving potential human exposure to hazardous materials.

WAC 173-154 Protection of Upper Aquifer Zones RELEVANT AND APPROPRIATE

Chapter 173-154 WAC provides for protection of the upper aquifers and upper aquifer zones to avoid depletions, excessive water level declines, or reductions in water quality. State regulations for upper aquifer zones are applicable to remedial alternatives that involve treating ground water or presenting risks of ground water contamination.

WAC 173-201 Water Quality Standards for the State of Washington
APPLICABLE

Ecology classifies surface waters according to their water quality and uses of the water body. The surface waters of the Columbia River are classified as Class A.

WAC 173-220 National Pollutant Discharge Elimination System Permit Program RELEVANT AND APPROPRIATE

The purpose of this chapter is to establish a state permit program, applicable to the discharge of pollutants and other wastes and materials to surface waters of the state.

WAC 173-240 Submissions of Plans and Reports for Construction of Waste Water Facilities RELEVANT AND APPROPRIATE

Chapter 173-240 WAC regulations require that Ecology review and approve plans and for waste water treatment facilities that discharge to ground water.

WAC 173-300 Certification of Operators of Solid Waste Incinerator and Landfill Facilities RELEVANT AND APPROPRIATE

Chapter 173-300 WAC defines when certification of operators is necessary at incinerators and landfills.

WAC 173-304 Minimum Functional Standards for Solid Waste Handling
APPLICABLE

Chapter 173-304 WAC regulations pertain to solid waste handling facilities (e.g., municipal landfills). They contain provisions for facility design, maintenance, and closure.

WAC 173-434 Solid Waste Incinerator Facilities RELEVANT AND APPROPRIATE

This regulation defines emission standards and design and operation of solid waste incinerator facilities.

WAC 232-12 Wildlife Classification RELEVANT AND APPROPRIATE

Chapter 232-12 WAC identifies endangered, threatened, and sensitive species of fauna.

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WAC 248-54 Public Water Supplies RELEVANT AND APPROPRIATE

Chapter 248-54 WAC identifies the requirements of public water supply systems.

WAC 446-50 Transport of Hazardous Materials APPLICABLE

Chapter 446-50 WAC regulations are generally analogous to the corresponding federal regulations 49 CFR. Transport regulations are applicable to any off-site transportation of hazardous materials.

FEDERAL ARARs

4. CHEMICAL SPECIFIC

33 U.S.C. 1251 Clean Water Act APPLICABLE

40 CFR 131 Water Quality Standards APPLICABLE

42 U.S.C. 300 (f), 40 CFR 141 Safe Drinking Water Act APPLICABLE

40 CFR 264 Subpart F Concentration Limits TO BE CONSIDERED

40 CFR 264.521 Corrective Action at Solid Waste Management Units
TO BE CONSIDERED

40 C.F.R 141.13 Maximum Contaminant Levels for Turbidity RELEVANT
AND APPROPRIATE

40 C.F.R 141.3 Secondary Maximum Contaminant Levels for Drinking
Water RELEVANT AND APPROPRIATE

E.P.A Directive 9355-.4-01FS 1990 Guide on Remedial Actions at
Superfund Sites with PCB Contamination TO BE CONSIDERED

Richland City Ordinance 35-84 Public Owned Treatment Works TO BE
CONSIDERED

5. ACTION SPECIFIC

42 U.S.C. 6901 Resource Conservation and Recovery Act APPLICABLE

29 CFR 1910 Occupational Safety and Health Act APPLICABLE

40 CFR 122 Discharge of Treated Effluent APPLICABLE

40 CFR 141.13 Maximum Contaminant Levels for Turbidity RELEVANT
AND APPROPRIATE

40 CFR 261 Identification and Listing of Hazardous Waste RELEVANT
AND APPROPRIATE

40 CFR 262 Standards for Generators of Hazardous Waste APPLICABLE

40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
RELEVANT AND APPROPRIATE

40 C.F.R 264 Standards for Owners and Operators of Hazardous
Waste Treatment, Storage, and Disposal Facilities APPLICABLE

40 CFR 268.44 Land Disposal Restrictions APPLICABLE

40 CFR 761.30 PCBs Storage and Disposal RELEVANT AND APPROPRIATE

40 CFR 761.60 Alternative Technology to Incineration RELEVANT
AND APPROPRIATE

40 CFR 761.70 Chemical Waste Landfill RELEVANT AND APPROPRIATE

40 CFR 50 Air Quality Standards RELEVANT AND APPROPRIATE

40 CFR 58 Ambient Air Quality Surveillance RELEVANT AND
APPROPRIATE

40 CFR 60 New Source Performance Standards RELEVANT AND
APPROPRIATE

40 CFR 61 National Emissions Standards for Hazardous Air
Pollutants RELEVANT AND APPROPRIATE

40 CFR 122 NPDES Permit Program RELEVANT AND APPROPRIATE

6. LOCATION SPECIFIC

16 U.S.C 461 Historic Sites, Buildings, and Antiquities Act
RELEVANT AND APPROPRIATE

16 U.S.C. 742 Fish and Wildlife Improvement Act RELEVANT AND
APPROPRIATE

16 U.S.C. 2901 Fish and Wildlife Conservation Act RELEVANT AND
APPROPRIATE

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167 U.S.C. 1271 Wild and Scenic Rivers Act RELEVANT AND
APPROPRIATE

50 CFR 17 Endangered Species Act RELEVANT AND APPROPRIATE

26. Table 1B, Page B-13:

Deficiency: The soil cleanup standards are applicable.

Recommendation: Revise this to restate the applicability of Chapter 173-340-740
WAC.

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CORRESPONDENCE DISTRIBUTION COVERSHEET

Author

Addressee

Correspondence No.

Richard B. Hibbard, Ecology

Mr. Eric Goller, RL

Incoming: 9301636

Subject: Review of the 100 Area Feasibility Study Phases 1 and 2 (DOE/RL-92-11)

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		B. A. Austin	B2-35	X
		R. D. Wojtasek, (Assignee)	H6-27	
		EDMC	H6-08	X

